

Appl. No. 10/763,137
Response Dated February 28, 2006
Reply to Office Action of November 30, 2005

Attorney Docket No. 88519.0002
Customer No.: 26021

REMARKS

This application has been carefully reviewed in light of the Office Action dated November 30, 2005. Claims 1-12 remain in this application. Claims 1 and 7 are the independent Claims. It is believed that no new matter is involved in the arguments presented herein. Reconsideration of the application is respectfully requested.

Allowable Subject Matter

Claims 1-6 were allowed. Claims 8, 10 and 12 were indicated to be allowable if rewritten in independent form to include all of the limitations of the base claim and any intervening claims. Applicant thanks the Examiner and formally recognizes the allowance of Claims 1-6 and the allowable subject matter of Claims 8, 10 and 12.

Art-Based Rejections

Claims 7, 9 and 11 were rejected under 35 USC §103(a) over USPAPN 2002/0126719 A1 (Kadota) in view of USPAPN 2003/0209723 A1 (Sakai). Applicant respectfully traverses the rejections and submits that the claims herein are patentable in light of the arguments below.

The Kadota Reference

Kadota is directed to a semiconductor photonic device having a substrate, a low resistance ZnO buffer layer disposed on the substrate, and a compound semiconductor layer formed on the ZnO buffer layer. According to Kadota, the compound semiconductor layer is $\text{In}_x\text{Ga}_y\text{Al}_z\text{N}$ where $x+y+z=1$, $0 \leq x \leq 1$, $0 \leq y \leq 1$, and $0 \leq z \leq 1$. (See Kadota, Par. 19; FIG. 4).

The Sakai Reference

Sakai is directed to a GaN-based semiconductor device having a transparent electrode 21 formed on a p-type GaN layer 18. (See Sakai, Par. 17; FIG. 1).

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The Claims are Patentable Over the Cited References

The present application is generally directed to a GaN system semiconductor light emitting device.

As defined by independent Claim 7, a semiconductor light emitting device has a light emission layer consisting of a GaN system semiconductor, which is interposed between an n type GaN system semiconductor layer and a p type GaN system semiconductor layer. A B-doped $\text{Mg}_z\text{Zn}_{1-z}\text{O}$ ($0 \leq z < 1$) electrode film disposed on one of the GaN system semiconductor layers is provided.

The applied references do not disclose or suggest the above features of the present invention as defined by independent Claim 7. In particular, the applied references do not disclose or suggest, "a B-doped $\text{Mg}_z\text{Zn}_{1-z}\text{O}$ ($0 \leq z < 1$) electrode film disposed on one of the GaN system semiconductor layers," as required by independent Claim 7.

Kadota discloses a ZnO buffer layer between a compound semiconductor layer and a substrate. (See Kadota, Par. 19; FIGS. 1 and 4-5). Kadota discloses a ZnO layer on the substrate. (See Kadota, Par. 19).

The Office Action concedes that Kadota does not disclose or suggest an $\text{Mg}_z\text{Zn}_{1-z}\text{O}$ ($0 \leq z < 1$) electrode film disposed on one of the GaN system semiconductor layers as required by independent Claim 7 of the present invention.

The Office Action purports that Sakai discloses an $\text{Mg}_z\text{Zn}_{1-z}\text{O}$ ($0 \leq z < 1$) electrode film disposed on one of the GaN system semiconductor layers. However, as with Kadota, Sakai fails to disclose or suggest this feature of the present invention, and Sakai fails to even mention the use of Magnesium-Zinc-Oxide (MgZnO). In particular, Sakai discloses a ZnO transparent electrode 21 formed on a p-type GaN layer 18. (See Sakai, Par. 17; FIG. 1).

In contrast to both Kadota and Sakai, independent Claim 7 requires an $\text{Mg}_z\text{Zn}_{1-z}\text{O}$ ($0 \leq z < 1$) electrode film disposed on one of the GaN system layers to

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improve, for example, the light emission efficiency thereof and electric current diffusion thereto. (*See Specification, FIGS. 4-6*).

Accordingly, the applied references do not disclose or suggest the above features of the present invention as recited in independent Claim 7.

Since the cited references do not disclose or suggest the above features recited in independent Claim 7, these references cannot be said to anticipate or render obvious the invention which is the subject matter of that claim.

Accordingly, independent Claim 7 is believed to be in condition for allowance and such allowance is respectfully requested.

The remaining Claims 9 and 11 depend directly from independent Claim 7 and recite additional features of the invention which are neither disclosed nor fairly suggested by the applied references and are, therefore, also believed to be in condition for allowance.

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Conclusion

In view of the foregoing, it is respectfully submitted that the application is in condition for allowance. Reexamination and reconsideration of the application, as amended, are requested.

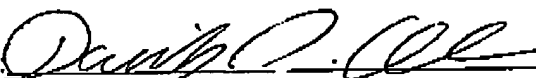
If for any reason the Examiner finds the application other than in condition for allowance, the Examiner is requested to call the undersigned attorney at the Los Angeles, California telephone number (213) 337-6809 to discuss the steps necessary for placing the application in condition for allowance.

If there are any fees due in connection with the filing of this response, please charge the fees to our Deposit Account No. 50-1314.

Respectfully submitted,
HOGAN & HARTSON L.L.P.

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By:



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